REMARKS/ARGUMENTS

This application contains claims 1-20 as originally filed.

The amendments to the specification appropriately correct the errors noted in Section 1 of the Detailed Action. With respect to Section 2 of the Detailed Action, the applicants are not aware of any other errors requiring correction.

In Sections 3-5 of the Detailed Action, claims 1-20 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Abe et al. US Patent No. 5,537,394 and/or Perlman US Patent No. 5,323,394. These rejections are respectfully traversed, for at least the following reasons.

Section 4 of the Detailed Action regards the topology engine of claim 1 as being constituted by the neurons of the neural network NN in Fig. 5 of Abe et al. As noted in that figure and supported by the text (for example column 14, line 14 reciting "The routing control section 70A uses a neural network" and column 10, lines 20-23 reciting "each node is provided with ... a routing control section 70A"), the neural network NN is provided at each node ND of Abe et al.'s communications network CN. The Action further contends that "The host processor is the combination of the switch and switch controller of Fig. 4". The switch SW and switch controller SC in Fig. 4 of Abe et al. are likewise provided in each node (see column 12, lines 11-12). Thus the features that Section 4 of the Detailed Action correlates to claim 1 are features within an individual node of the network in Abe et al.

In contrast, claim 1 recites "supplying queries representing physical problems of the network from a host processor of the network to the topology engine". Further, claim 1 recites "supplying responses to the queries from the topology engine to the host processor". There is no "host processor of the network" disclosed by Abe et al., only processors individual to the nodes. Similarly, in Abe et al. there is no disclosure of supplying queries from such a host processor of the network, or of supplying responses to the queries from the topology engine to the host processor, as recited in claim 1. Accordingly, Abe et al. does not disclose all of the features recited in claim 1.

Claim 7 is more detailed in reciting a communications network having connections between network devices "managed by a host processor of the network". There is no such host processor disclosed by Abe et al., and the same comments as above apply even more clearly in this case.

In addition, claim 7 recites "representing a topology of said network by a topology of a connection engine, the connection engine comprising processing elements representing respective network devices and connections between the processing elements representing respective connections between the network devices". Abe et al. does not disclose "connections between the processing elements representing respective connections between the network devices". On the contrary, in Abe et al.'s neural network NN, as recited starting at column 14, line 28, links of the communications network are represented by link associative neurons of the neural network. The link associative neurons in Abe et al. are not connections between the

processing elements. It is clear, therefore, that not only does Abe et al. not disclose this feature of claim 7, but the nature of Abe et al.'s neural network is substantially different from that of the topology engine of the present invention.

Accordingly, the contentions in Section 4 of the Detailed Action with respect to claim 1, that "the connection matrix is represented by the status of "link associative neurons" Vij described in 12-35of column 15" of Abe et al. appear not to be correct, and claim 1 appears to be further distinguished from Abe et al. in this respect. This is further emphasized by the fact that in Fig. 5 of Abc et al. the illustration of connections between neurons NR in the neural network NN is not the same as the illustration of links LK between nodes ND in the communications network CN.

Claim 15 contains corresponding and further recitals of features similar to those discussed above with respect to claims 1 and 7, and substantially the same comments apply to it. In particular, claim 15 recites "representing each connection between the network devices by a respective connection between the processing elements of the connection engine representing the respective network devices". In Abe et al. connections between network devices are not represented by connections between corresponding processing elements of a connection engine, but in a completely different manner by neurons in a neural network.

With respect to dependent claims 2, 8, and 16, these recite that a plurality of processing elements of the topology (or connection) engine are constituted by different instances of a processor, whereby the topology engine has a smaller number of processors than processing elements (or the number of network devices of the communications network). Contrary to the contention in Section 4 of the Detailed Action, Abe et al. specifically recites, e.g. at column 14, lines 31-34 that the neural network NN comprises "a neuron that is associated one to one with each node ND in the communications network CN". Further, claims 7 and 15 recite a plurality of such processors, in contrast to the single "routing control section implemented as an individual unit or processor" referred to in the Action. Accordingly, these features of claims 2, 8, and 16 are not disclosed by Abe et al.

For at least the above reasons, it is respectfully submitted that claims 1-2, 6-8, 13-16, and 20 are not anticipated by Abe et al.

In Section 5 of the Detailed Action it is contended with respect to Perlman that "the processing elements and network devices are the bridges and end devices of figure 1". This contention is not correct. The Detailed Action refers in this respect to the part of the present specification stating that "each processor node 32 can be located with, and potentially incorporated into, the network device 22 which it represents". However, it should be understood that whether a processor node 32 is separate from, located with, or incorporated into a network device which it represents, it is still a processor node which is distinct from the network device which it represents. Incorporating a processor node which represents a network device into the network device does not make the processor node disappear.

Consequently, it is clearly incorrect to contend that the processing elements and network devices "are" the bridges and end devices of Perlman's Fig. 1. As recited in the present claims 7

and 15, the processing elements represent network devices, and connections between processing elements represent respective connections between the network devices, so that the topology of the network is represented by the topology of the connection engine. This is not the case in Perlman, in which there are no processing elements representing either the LAN bridges or the end devices, and no connections between processing elements representing connections between network devices; there are only the LAN bridges, end devices, and the actual connections between them.

With respect to claim 1, Section 5 of the Detailed Action contends that "The connection matrix is the collective set of connections between the bridges.", implying as stated that the LAN bridges of Perlman are regarded as corresponding to the processing elements of claim 1. Claim 1 recites the steps of:

"supplying queries representing physical problems of the network from a host processor of the network to the topology engine;

processing the queries in the processing elements of the topology engine in accordance with the topology of the topology engine; and

supplying responses to the queries from the topology engine to the host processor."

It is clear from these parts of claim 1 that the "host processor of the network" is necessarily different and distinct from the "processing elements of the topology engine". If the processing elements of the topology engine are constituted by the LAN bridges of Perlman as contended in the Action, then these same LAN bridges can not also constitute the "host processor of the network" within the meaning of claim 1. But this is what is contended in Section 5 of the Detailed Action, by the statement "The host processor is the bridge directly connected to the LAN containing the end system ...".

Stated alternatively, the Detailed Action contends that a LAN bridge constitutes the host processor of the network, and that the LAN bridges collectively are the processing elements of the topology engine. This is inconsistent with claim 1, which recites the host computer of the network differently and distinctly from the topology engine and its processing elements, and further recites supplying queries and responses between these different elements.

This contention is thus seen to be incorrect, and claim 1 recites features which are not disclosed by Perlman. Specifically, Perlman does not disclose the host processor of the network recited in claim 1, and/or does not disclose the processing elements of claim 1, and does not disclose the steps of supplying queries and responses between the host processor and the topology engine, as recited in claim 1.

Each of claims 7 and 15 recites in lines 2-3 a "communications network having connections between network devices managed by a host processor of the network". Perlman does not disclose any such host processor.

Claims 7 and 15 also recite processing elements and connections between them representing network devices and connections between them, respectively. Perlman does not disclose such processing elements and connections between them. As discussed above, the processing elements of the connection engine exist, and are properly recited in these claims,

regardless of any specific implementation of the invention in which for example the processing elements may be located with or incorporated into the network devices.

Contrary to the contentions in the Detailed Action, the "explorer messages" and acknowledgement messages of Perlman do not constitute "a connection search message" and "information identifying the connection path" as recited in each of claims 7 and 15. As stated in these claims, the connection search message is supplied "from the host processor to the connection engine". This is not the case in Perlman, in which the explorer message is originated by an end system (see column 5, lines 55-61), not a host computer. Further, as stated in these claims, the information identifying the connection path is supplied "from the connection engine to the host processor". This is not the case in Perlman, in which the acknowledgement message is supplied to the originating end system (see column 6, lines 8-10), not to a host computer.

Thus numerous features of claims 1, 7, and 15, and likewise these and further features of the dependent claims which it is considered unnecessary to discuss further here, are not disclosed by Perlman. Consequently, Perlman does not anticipate any of claims 1, 3-7, 9-15, and 17-20 as contended in the Action.

It is therefore respectfully submitted that all of claims 1-20 are properly allowable over the applied references. The Applicant therefore respectfully requests that a timely Notice of Allowance be issued in this application.

The Examiner is respectfully requested to pass this application to allowance but, if there are any outstanding issues, the Examiner is respectfully requested to telephone the undersigned.

Respectfully submitted,

MARK S. WIGHT, ET AL

By ______________________

James McGraw
Reg. No. 28,168
Tel.: (613) 232-2486 ext. 310

Date: July 16, 2004

JMc:RJH:acb